

JACG VOICE

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THE JERSEY ATARI COMPUTER GROUP



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In This Issue

From the Editor's Desk...

The smell of freshly mowed grass intermingled with the chirping of happy birds, puffy clouds in an azure sky, and the warm kiss of unfiltered sunshine. Yep. It is, thank heavens, that time of year so many of us have waited so long for over this strange winter. With the advent of this reawakening of nature comes a time to refresh our minds and souls. It is a time for rekindling those things which make this sometimes dreary chore of living quite worthwhile.

As the world finds refreshment so, it seems, does our own little sphere of Atariana! The hope of having always been in the right place is brightening. The actual appearance in stores of the 130XE and the limited, but genuine, showing of the 520ST gives rise in the breast of the faithful that we were, after all, in the right camp all along. With the appearance of the hardware comes also the first trickles of what should prove to be a new deluge of quality software for the 8 and 16 bit machines. It appears that the drought is ending.

Another interesting phenomena has also surfaced in our group. The word has gone out that we need new blood to infuse new ideas into the JACG. Help was needed in several areas of club operation. The Trenton showing of the new line needed volunteers. You came forward in large numbers. The needs were filled.

It is, indeed, spring and the faith and beauty is restored. Thanks for doing your part.

Frank Pazel
Editor-in-Chief, JACG Newsletter

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MARK YOUR CALENDARS!!

JACG Meeting Schedule

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June 8, 1985
July 13, 1985
August 10, 1985

From The Conn.....

April has been a busy month. Our monthly meeting was well received, as usual. On Kordos, our treasurer reports that we continue to be strong financially and have maintained an over-500 person membership. We remain one of the strongest Atari User Groups in the country. I say, well done, well done, indeed.

April was also the month for the annual Trenton Computer Festival. Dick Kushner's article discussing the Fair appears elsewhere in this issue of the newsletter. Dick reports that the Fair was a tremendous success, both for Atari and for JACG. About 20 volunteers came forward to help staff our booth during the weekend. Given our problem with finding volunteers in the past, I commend these folks for donating their time to a group activity. Their efforts were responsible for the success of the weekend.

There are a couple of people that deserve special thanks for making our presence at Trenton a success. Dick Kushner organized our involvement and made arrangements for the booth. He also arranged for Atari to send Dennis Johnson, with a 520ST computer. Scott Brause never seems to run out of energy. He spent both days slaving over a "hot ST", demonstrating its features and answering questions. He also shuttled Dennis Johnson back and forth between Philadelphia and Trenton. Jerry Freise put together a fine demo using Visualizer to explain who we are and what we do. Jerry and his wife also made a table dinner displaying the JACG logo and colors. Dennis Johns had his excellent "Atari Adventure" tape that we saw at the last meeting running on a video recorder for all to see. Dennis also took some videos (computer videos, ala CTV" that we should see at the May meeting. Thanks to Dick, Scott, Dennis, Jerry and Dennis, and to all the volunteers for making the JACG booth a huge success. I understand that it was the most crowded booth at the Fair.

A little Atari news.....As you know, the Atari 130XE computers are out. I have had one for about 2 weeks and think that it is great. Using the extra 64K of RAM for a RAMDISK, files load and save at lighting speed. Also, going to DOS from BASIC takes less than 2 seconds compared to the 10 to 15 seconds required when DOS is loaded from disk. Look for a complete review of the 130XE computer in a Analog magazine near you real soon.

Also on the Atari scene, Atari will not be attending the Summer Consumer Electronics Show, held in Chicago next month. With a small staff of approximately 120 employees, Atari cannot afford the manpower to put on a booth in the normal tradition. Also, it is estimated that a booth at CES, complete with personnel and all the trimming, may cost as much as 1 million dollars. Far too expensive for the financially struggling Atari Corp. Atari will, however, have a hotel suite to show off the ST and take orders.

As I mentioned at the April meeting, JACG will be the featured User Group in the June issue of the Atari Explorer magazine. Dick Kushner and I have written a history/description of the group that will appear in the Explorer magazine. That piece can be found elsewhere in this months newsletter.

On another note, Frank Pazel announced at the last meeting that he would be unable to continue as newsletter editor. Frank took over the newsletter from me about a year and a half ago and has turned the newsletter into something that we are all proud of. The newsletter is, to put it simply, excellent and Frank even manages to make it better each month. It is recognized as THE best newsletter in the country and we are especially proud of the fact that it is entirely JACG member-written. Frank may still be available for editing and managing duties but a new person will have to assume the bulk of the work. Thank you Frank, for your labor of love and your contribution to the success of the Jersey Atari Computer Group.

That's all the news this month. As Spring approaches with its vitality, promise of new life and excitement, the JACG continues to remain healthy, and like Spring itself, offers vitality and excitement to its members.

**Arthur Leyenberger
President, Jersey Atari Computer Group**

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**HAVE YOU RENEWED
YOUR MEMBERSHIP?**

**CHECK YOUR MAILING LABEL
FOR MEMBERSHIP EXPIRATION DATE**

A decorative horizontal line consisting of a series of black asterisks (*).

THE REPORT CARD

by Frank Pazel - JACG

Anyone who has even looked at the fantastic things an Atari computer is capable of doing during an arcade-type game has had to have lusted to produce their very own game. Those who have tried know that without a knowledge of machine language and assembly machinery little can be done. Well---not quite so, according to Dr. C. Wacko, Professor of Computer Wacko Science.

In his book, Dr. C. Wacko's Miracle Guide to Designing and Programming Your Own Atari Computer Arcade Games (take a breath) he shows you just about all you need to know in order to be able to write a decent little game in BASIC. It won't be a Preppie with 16 colors at a time, and it won't be Ballblazer with rapid action movement, but it will have features which were considered terrific just a year ago or so, with player missiles and sounds and it will be entirely YOURS.

Actually DCWMGTDAPYDAG is a disguise for beginner's tutorials in everything from how to turn on and boot up the system to generating those evasive custom PMGs. The book is not exactly for raw beginners. A working knowledge of BASIC is a decided advantage but not an absolute necessity. Short programs lead the reader through the mazes of program development so with a bit of supplemental reading most users will be able to apply what is being presented with no pain.

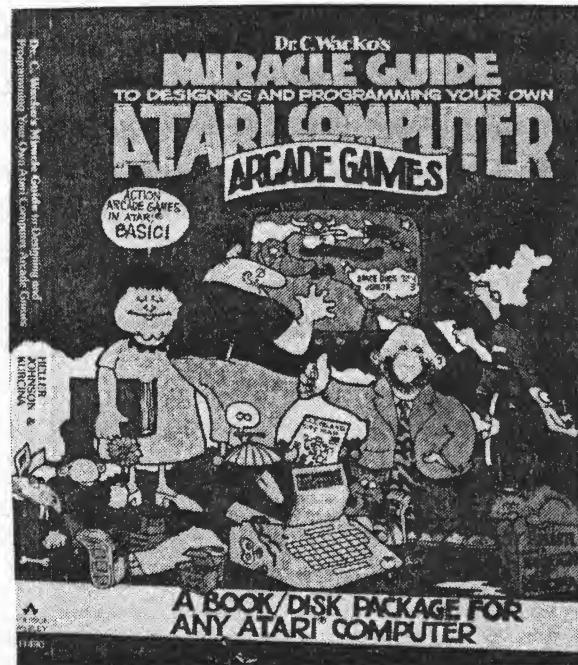
The book is generously sprinkled with clever cartoon characters, headlined by (who else?) Dr. C. Wacko, himself. They are an insane assemblage who bring humor and light-heartedness to what has previously been Very Serious Business. Pages are held together with a comb binding which makes it easy to open flat to any page, a real convenience when typing in programs or following along with the optional accompanying disk.

The learning opens by laying a firm foundation on the elements of good game design. The parameters laid out could serve as the criteria for any good game no matter what. Dr. W then moves us through graphics modes (including COLOR and PLOT), character graphics, redefined character animation and movement, use of the joystick, collision detection, and sounds. He candy-coats these dull sounding subjects with titles like Flip-Flop Animation, Adversaries and Things that Bounce in the Night, and Zounds. Chapter 10, The Bogus Balonous Bonus Section is worth the price alone if you want to learn the real truth about Player-Missile Graphics.

As if all of this wasn't enough you are treated to four Appendices (appendices?) which explore ATASCII codes, give you several nice utility programs,

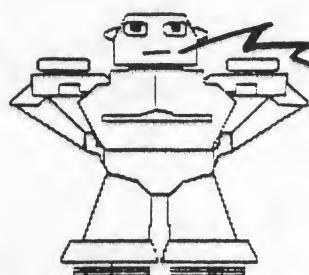
provide a bonus game called Myrtle the Turtle, and lists many useful PEEKS and POKEs.

The book is available with or without an accompanying disk which contains all of the major programs ready to run. By all means go for the extra bucks and get the combo. The disk has a complex menu structure which can be frustrating if you want to look at several programs in succession. However, the third page of the book has a complete disk directory showing file names of the programs. Simply BREAK your current program and RUN the new file. The listings contain ample REM statements, making them easy to understand structure and find areas of interest.



DCWMGTDAPYDAG has been seen in the mall book stores for \$19.95 sans disk and about \$24.95 with. Authors seem to be David Heller, John Johnson and Robert Kurcina. Publisher is Addison-Wesley Publishing Company and it is part of their Microcomputer Books Popular Series.

In view of the overwhelmingly valuable information, clever writing and graphics, and bottom-line usefulness I give this offering an A+ in my gradebook. If you want a copy you may have to hurry. The book has been out a while and it may have to be ordered. I'm just sorry I didn't discover it sooner.



YOU BETTER 'GIVE A BIT'
THIS MONTH OR I'M GOING
TO COME AND GET YOU!!!

Brief History of J.A.C.G
By Dick Kushner and Arthur Leyenberger

The Jersey Atari Computer Group (JACG) was founded in the summer of 1981 by Richard Kushner and five other new Atari owners. They were wondering if their decision to buy Atari computers was the smart thing to do. With little software, documentation or support, but with great promise, this new computer held the interest of all who saw it.

In no time at all, these six brave souls found themselves embarking on a great adventure that is still taking place. Then, through word of mouth and contacts at local computer stores, the group grew to about 15 members. Informal meetings and one-on-one discussions soon gave way to regular meetings at various members' homes. By the fall of 1981, when the group meetings began to attract more than 30 members, it was clear that meeting in homes was impractical. Then, through a member who was employed at Bell Laboratories, the group was able to gain the use of a conference room that seated seventy people. This took care of space problems, at least for the moment.

At the same time, it was also evident that a newsletter would be a valuable asset to members and thus the JACG Newsletter was born in December 1981, the same month the first meeting was held at Bell Labs. Dick Kushner, the group's founder and first president, also assumed the role of newsletter editor. The group officers felt confident that they would be able to use this fine meeting facility for many months; however, by February of 1982, the group was again overflowing the capacity of its meeting place.

During this period, an Atari group had formed among Bell Labs employees. Through this group JACG was able to obtain the use of the main auditorium for joint monthly meetings beginning in April of 1982. Here was a facility to be proud of, indeed. There was theater-style seating for more than 400, a projection TV, a sophisticated sound and light system with overhead projectors and screens and plenty of parking space. This fabulous facility has been our home ever since.

By the summer of 1982, the group's president, Dick Kushner, realized that he could not publish the newsletter AND be president of the club. A volunteer was needed to take on the responsibilities of the newsletter. Luckily a member of only a few months was looking for a way to become involved with the computer group and to learn more about his computer. Arthur Leyenberger signed on as editor of the newsletter in August 1982. The newsletter which had previously been duplicated on a copying machine, was now printed by a commercial offset printer, and contained more articles, editorials, artwork and programs than ever before. Soon the newsletter was reaching 24 to 32 pages and had a press run of hundreds of copies.

Membership passed the 100 level in spring 1982, the 200 level in the fall, the 300 level in the summer of 1983 and

currently stands at more than 500 paid members. In November 1983, Frank Pazel took the reigns of the newsletter from the retiring Art Leyenberger. Art was going on to write the Atari column for Creative Computing magazine. Frank took an already excellent newsletter that was respected by every user group in the country and turned it into an even better journal. The newsletter is typically 32 pages and reached a press run of 800 copies. JACG is especially proud that our newsletter is entirely written by club members. The 32 pages of member supplied articles, reviews and programs is mailed to our membership plus about 100 other Atari groups around the country. It is also being sold in several local computer stores. We must be doing something right!

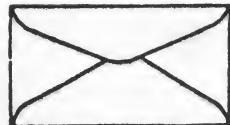
Dick Kushner retired as president in November 1984. He was replaced by Arthur Leyenberger, our current president. The current group of officers, presiding over a membership of well over 500 Atari users, has done, and is doing an exceptional job. Scott Brause, our Vice President and BBS Sysop, is young and energetic. He has written the BBS system and has added hard disk drive support to our board. Larry Moriano, our Secretary, is responsible for getting the newsletters mailed on time and distributing them at the meetings. Ron Kordos is our treasurer, who like David Stockman, keeps the funds balanced and in the black. Ali Chaudry runs our meetings and with an audience that usually averages over 300 members, must stay on his toes to please the crowds. Joe Rowland is responsible for getting advertising dollars from ads placed in our newsletter and Vince Murphy and Herb Lehner make sure that the meeting gets set up and equipment is ready and working. Don Ursem, our librarian, is responsible for the group having almost seventy volumes of public domain software. Between him, Richard Lamb, Dennis Hoskins, Charles Neppel, Harold Wolverton and Manny Lieberman, the software library gets reviewed, edited, documented, copied and distributed to our members.

The Jersey Atari Computer Group is also proud of the fact that several of our members are nationally famous writers or software authors. Dick Kushner co-authored the excellent book entitled, Basic Atari Basic with James Coan, published by Hayden Books. Arthur Leyenberger has written for COMPUTE!, Antic, Creative Computing and Analog Magazines. He is currently the East Coast Editor of Analog. Donald Forbes, a FORTH evangelist, has written voluminously for our newsletter and has been writing the FORTH column for Analog magazine for several months. Don Ursem has two software titles under his belt, Starbase Hyperion and Tank Trap, both from Quality Software. These titles were ones of the first dozen software programs for the Atari computer in 1979.

JACG has also been fortunate to have had several nationally known speakers come to our monthly meetings. Chris Crawford, Jerry White and Dan Bunten are some of the names of our guests. Our monthly meeting is attended by 300 to 400 members every month. The Saturday meetings, held on the second Saturday of each month, usually feature a

guest speaker and contain several software/hardware demonstrations. A question and answer session that is opened up to the general audience is one of the highlights of every meeting. Here, any member can raise a question before the group and get help with a problem. Sharing information is what the Jersey Atari Computer Group is all about. Tutorials are often given at our meetings on such subjects as programming languages, graphics, application packages and telecommunications. We also have a very active sale and swap session before every meeting.

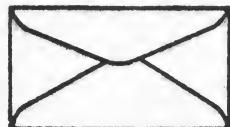
In addition to our excellent newsletter, bulletin board (201-549-7591) and monthly meetings, JACG also has a Hotline (201-884-1642) which gives information about the club and has the latest, current information about the world of Atari computing. We are proud of JACG and the many benefits that we offer our members. We encourage out-of-state members who may join our group and subscribe to our newsletter. The cost is \$20/year: mail to: Ron Kordos, 201 Lake Valley Road, Morristown, NJ 07960.



PRINT SHOP ENVELOPES

Having a problem finding those little envelopes to stuff your Print Shop greeting cards into? Been going crazy running from one stationery store to another, without any luck? Well, your quest is over, thanks to Betty Kordos (Ron - the Treasurer man's missus).

Betty reports that Bradlees has exactly the right envelopes in colors yet, at \$1.58 for 25. Such a bargain! Thanks, Betty, for this useful tip. If anyone else runs into Print Shop type supplies, let us know for the good of the order.



RICHARD S. SEMEL
33 Aspen Road
West Orange, New Jersey 07052

April 1, 1985

Dear Frank,

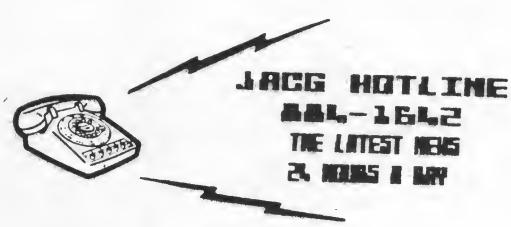
Despite the date, this is not an April Fool's joke. I have discovered a bug in SynCalc.

What you save is not always what you get when you reload. Some calculations appear to get lost. I first noticed this when using the Antic tax template. More recently, I prepared the enclosed stock information sheet, saved it after calculating the 1984 tax consequences, and then printed a copy. When I lost the printed copy, I reloaded the sheet and was about to print another copy when I noticed that the figures based on calculations were wrong. I recalculated the entire sheet and got the correct figures. This is the same thing that happened with the tax forms.

Anyone using the program for important work should recalculate once or twice before printing, especially before printing a sheet which has just been loaded into the computer.

Cordially,

Richard Semel



FORTH FOR THE NOVICE

by Donald Forbes - JACG

One of the best early discussions of the internals of Forth was prepared by Art White of 1371 Nashville St. in San Diego. His article appeared in the Feb 1982 issue of Microcomputing, which is no longer published.

Despite the large literature on Forth, only a tiny fraction is devoted to the systems aspects and the mechanics and internal workings of the complicated Forth virtual machine.

Art's article has already earned a permanent place in the literature of Forth. I have cherished it for all these years, and believe it deserves to be brought out again for another generation of Forth users.

* * *

A FORTH program is executed much like a machine-language program. Because the normal stack is used heavily in Forth, a second stack is used for a return stack. This heavy use of the stack in Forth is one of the operating features which makes Forth unique.

The stack is where data, addresses, flags and other things used by the program (these are all lumped under the word parameters) are placed for easy availability when being passed from one portion of a program to another. But it could also be considered the Forth equivalent of the accumulator. Data which would otherwise be input to an accumulator is, in Forth, placed on the stack. Software routines perform the normal internal accumulator functions, and the result--data, flags, or whatever-- is placed back on the stack for use by the program.

MACHINE LANGUAGE PROGRAM VS. FORTH

MLP:

The PC executes the program step by step.

Forth:

The IP executes the program step by step.

MLP:

A section of memory contains the program.

Forth:

A section of memory contains the program.

MLP:

To select the program, the Program Counter (PC) is set to the first memory address of the program

Forth:

To select the program, the Interpretive Pointer (IP) is set to the first memory address of the program.

MLP:

The PC is then incremented, one memory address at a time.

Forth:

The IP is then incremented, one memory cell (16 bits) at a time.

MLP:

The contents of the memory addresses pointed to by the PC constitute the instructions for the processor.

Forth:

The contents of the memory cells pointed to by the IP constitute links to the instructions for the processor.

MLP:

To jump to another block of memory addresses, the PC is loaded with the starting address of the new block where the

incrementing action of the PC continues.

Forth:

To jump to another block of memory cells, the IP is loaded with the starting address of the new block where the incrementing action of the IP continues.

MLP:

If the jump happens to be a call, the address following the call is saved on the stack. When this address is later placed back into the PC, a return has taken place.

Forth:

In the Forth equivalent of a call, the address of the memory cell following the call instruction is saved on a return stack. When this address is later placed back into the IP, a return has taken place.

A few differences between Forth and other microcomputer languages are outlined in this second table.

OTHER LANGUAGES VS. FORTH

Other:

One memory address is accessed at a time.

Forth:

One memory cell (16 bits) is accessed at a time.

Other:

One memory address contains eight bits of information--the work unit is eight bits.

Forth:

One memory cell contains 16 bits of information (= two memory addresses)--the work unit is 16 bits.

Other:

The PC is automatically incremented internally within the processor chip.

Forth:

The IP is incremented by a software routine. This routine is called NEXT.

To simplify the computer's workings for the people who use it, the address in memory where each routine starts is customarily given a label, or name, and the routine itself is referred to by this name. Names are words, and in Forth each routine is referred to as a word. A group of words can be combined in a sequence to perform a task, and this group of words can be called by its own name.

To assist Forth in its bookkeeping, each word follows a format. The name field is handy when Forth is searching for a word in its dictionary--the section of memory where these words are located. The dictionary section of memory is illustrated by this example: (Low address. Word 7. Word 8. Word 9. Word 10. High address). Forth words are added consecutively in the dictionary part of Forth memory in the order in which they are created.

These words are usually of varying length, depending on the length of the name and the contents of the parameter field. The link field and the code field are always one memory cell each. Words added more recently to the dictionary appear at the higher memory addresses. One nice thing about Forth is that most of these words are short.

Forth identifies a word by means of its name field, which also follows a format. Forth recognizes a word by checking the number of characters in the name and checking each character in the name individually. If the word is CAMERA, the

name field will look like this: byte 1 6, byte 2 C, byte 3 A, byte 4 M, byte 5 E, byte 6 R, byte 7 A.

The first byte is the length byte, and contains the number of characters in the name. Each following byte contains a character of the name. In searching for a word, Forth checks each byte in turn. If there is no match, it continues to the next word.

The smudge and precedence bits are of no concern at this point, so I'll just note that they exist. The link field is employed so that Forth can go from word to word in the dictionary until it finds the word it is looking for. The link field contains the name field address (NFA) of the previous word in the dictionary. Forth starts with the latest word added to the dictionary (high memory address) and works towards earlier words at the lower memory addresses.

The link field of the earliest word in the dictionary contains all zeros, which tells Forth that the search is ended and the word it is looking for is not in the dictionary.

This search procedure--going from word to word, checking the length of the name and checking for a match of all the characters of the name--uses routines which are controlled by NEXT and which involve the IP and PC, just as other routines do. This search procedure shows how a word can be found in the dictionary, if its name is known, through the teamwork of the name and link fields.

Dictionary words can also be accessed in another way, which is normally used when a program is running. It requires neither the name field nor the link field, and functions independently of them. Accessing in this way is principally the task of the IP and the NEXT routine.

One function of NEXT is to increment the IP. After this has been done, the IP points to the next memory cell. This memory cell contains the address of the code field (CFA) of the next word to be executed. It is called the code field because it always points to a section of memory where there is machine language (code) to be executed.

When the IP is incremented again, another word is chosen. Thus, through the stepping of the IP, words are chosen in sequence to perform the various chores required by the program.

The memory cell the IP points to is often called the word pointer because, in choosing its associated word, it too functions as a pointer. Remember that a pointer contains the address of what it is pointing to.

The content of the parameter field defines the word. The content of the code field is dictated by the content of the parameter field. That is, for each type of parameter field, there is a corresponding address in the code field. For example, a parameter field may contain one of the following:

1. A machine-language routine (code).
2. A constant.
3. A variable.
4. A list of previously defined words.

PART 2 NEXT MONTH

PEEKS AND POKEs

by Kenneth J. Pietrucha - JACG

Welcome to another edition of the JACG Peeks and Pokes column. Last month I asked for ideas and applications. The first application submitted was a double Poke location to disable the BREAK Key it was passed along from our editor-in-chief, Frank Hazel.

Begin your program with a POKE 566,143 followed by a POKE 567,231 and your break key will be disabled. It's that simple. This should prove very effective when writing programs for "small-fry" who like to "poke" at the keys.

I also found another double location in Compute's Mapping the Atari, which seems to do the same thing. POKE 16,64 followed by a POKE 53774,64 and goodby BREAK key. I've tried both and don't have any preference. Ed. note: (Using the second method your disable is lost if any graphics mode change is encountered. The first method is permanent.)

Another location which now seems to fit into the scheme of things is location 580. Known as 'Cold Start', this location normally contains a zero. When poked with a 1 however, it causes the computer to re-boot whenever the RESET key is pressed. If you put your program on the Autorun.Sys, each time the RESET key is pressed the system will re-boot and the program rerun. It's really quite effective. Take the following demonstration program:

```
5 POKE 566,143:POKE 567,231
10 POKE 580,1
20 X=X+1
25 PRINT X;
30 GOTO 20
```

You can also substitute the other locations in line 5. Now run the program and watch the numbers fill the screen. Hit the BREAK Key and nothing happens. If your program is in the autorun system, pressing the RESET key will automatically rerun the program. You will find location 580 being used on some of the JACG library disks. If you hit the RESET key during the program, the system is re-booted and the menu rerun automatically. This may not make your programs unlistable, but coupled with some good error trapping, it should make your programs 'kid proof'.

Once again, I'm asking for ideas or off-beat applications for PEEK and POKE locations. Send me a note, Xeroxed article or anything you think is unique. Send them to 610 Springfield Ave., Cranford, N.J. 07016. Until next month ...

IT'S ABOUT TIME...

THAT YOU WROTE AN
ARTICLE FOR THE
NEWSLETTER



Getting Down to BASICS

by Richard Kushner - JACG

This month I will cover the news and events of the Trenton Computer Festival (TCF), held the weekend of April 20-21. We'll get back to more short BASIC language "Goodies" next month.

The events leading up to the TCF are a story in themselves. A couple of months ago, I was volunteered to give a talk about Atari at this event. (the wording is correct). A few weeks later, after learning that Atari was providing 520ST computers to a couple of Atari user groups to demo at the West Coast Computer Faire, the brilliant idea popped into my head to ask the same consideration for the Jersey Atari Computer Group at the TCF. After all, this was a pretty good sized event. It was the 10th annual, more than 120 commercial booth spaces had been sold in the new recreation center, and about 20,000 computer enthusiasts were expected. Then the fun began and I was introduced into the decision making process at the new Atari. I began with the only contacts I knew at Atari, presenting my arguments for the importance of an Atari presence on the East Coast and promising that I could get sufficient support from our group to man the booth. Atari was definitely interested, but this was only determinable by me calling them, since they seem to want to save on their phone bill as well as everything else. Finally, a couple of days before the big event, I was informed that a ST computer would be transported to the TCF by Dennis Johnson, from the marketing and public relations department. Shortly after this we were informed that Dennis would be coming, but might not be able to bring an ST since it was needed for other things (like editing the manual for the new BASIC language). Then we learned that they would indeed pry the ST out of the hands of its user and let Dennis bring it along. In addition, a 130XE would come along with spec sheets and t-shirts for the JACG helpers. Things were looking terrific. And so I eagerly awaited a call from Dennis telling me that he had safely arrived with his cargo. We had gotten lots of volunteers to man our operation for the two days of the festival. (Who would pass up a chance to get their hands on the elusive ST for even a few minutes?) We had Scott Brause to meet with Dennis Johnson and guide him to Trenton. We were ready. Then the call came. Dennis was here, but two suitcases had been lost in his trip from New

York (where he gave a demo for WOR-TV) to Philadelphia. Was the ST never to be seen? Luckily the missing items were the 130XE, the spec sheets and the t-shirts! The JACG show was on.

And what a show it was. For the first time in as long as I can remember, the weatherman smiled on the TCF. After rain on the evening before the show, Saturday was very nice and Sunday was spectacular. The attendance was terrific and the biggest crowds were all in one corner of the student center in front of, you guessed it, the Atari ST. You had to be there to believe it. Ask any of the 20 or so JACG members who put in their two hours answering questions about JACG and the Atari computers. Onlookers were arrayed many deep and even climbing on the furniture to get a look at this new guy on the block. We made a lot of believers in those two days in addition to spreading the word about JACG. Sure we were demonstrating prototype equipment with only demo software, but one look was enough to convince even the most hardened IBM user that Atari was for real. There were graphics demos in color that were dazzling. The GEM desktop environment was very familiar territory for any Macintosh owner. The crowds never let up at any time in those entire two days. I was proud of the enthusiasm of our membership as they helped out. It felt good to be able to watch the mouths drop open in silent amazement rather than vocally heaping abuse on Atari, as we have felt so many times in the past.

Before I give a more analytical view of the ST computer, I want to thank two people very much. First, Dennis Johnson from Atari, for bringing the ST and agreeing to stand with me at my talk to field questions from our audience. Also, for trusting us to look after the machine while he took some time to revive from jet lag. I hope he got some feel for what tremendous good the user groups can be to Atari. And don't forget, Dennis, you still owe us the t-shirts! Second, I must give a special thanks to Scott Brause, a remarkable young man. Not only did he get Dennis to Trenton, he helped set up and tear down on both days and also spend nearly all of both days in front of the ST, demonstrating and programming to the continual amazement of everyone. He quickly became our expert on this new machine, throwing icons around with wild abandon and making multiple windows do magic. I won't

individually name the 20 other JACG members who helped out, but you all know I appreciate your contributions.

So, how good is the ST anyway? I consider myself qualified to answer this based on my few minutes with the machine and my recent intensive use of the Macintosh. As a piece of hardware, the ST is very good. It does the functions you expect from looking at its "desktop". It has icons, re-sizeable windows, menu bars and all those good Mac-like functions. We are told it is fast, but had no way of benchmarking this, other than knowing that the microprocessor is running at 8MHz versus the Mac's 5MHz. The color demos on the RGB monitor were stunning. I am told that the LOGO language is very good and that BASIC is under development and nearly ready. The mouse works just fine and so do the prototype 3-1/2 inch disk drives.

My big reservation is software. Where is the software? The pat answer is that many software houses have purchased the ST development system and are working on software. However, except for LOGO, there is apparently not one package ready and the computer will be out about the time you read this article (in small numbers with real volume in 30-60 days). If I were Atari, I would have locked the two best programmers I could find in a room with plenty of food and water and diskettes and a promise of big royalties and have had them develop a color analog to the famous MacPaint program. Then I would provide that program free with each computer. This would quiet the natives while the rest of the software community had time to develop other products. It would also sell a lot of computers. The \$800 price for a 512ST, monochrome monitor and disk drive (a Macintosh-like package) is terrific, no denying that. But software is what sells hardware and MacPaint sold Macintosh.

In summary, the 120 employees of the new Atari Corp have worked a near-miracle in bring out a product like the ST in the short time that it has taken. However, the battle is not yet won. To get beyond the hard core who will buy just about any new piece of hardware, Atari must see that good software is developed and soon. They must also use that vast network of user groups to show off the new machines. JACG provided the enthusiastic salespersons for this event, even paying their admission to the

TCF. Atari merely provided the hardware and reaped enormous positive publicity. You're welcome, Atari.

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Visicalc and SynCalc Compared

by Jerry Reilly

Visicalc has been described as reason enough to justify the purchase of a computer. I for one fully agreed with this statement. I purchased Visicalc about a year and a half ago and heavily used it for both my personal records and my business applications. Visicalc is a polished, well documented, useful program that was years ahead of its time when first released and contributed more significantly than any other program to the ultimate success of the home computer market. SynCalc has sprung on the scene and many have proclaimed it to be the best spreadsheet program available for the Atari computer. Being a facts and figures person by nature and a die hard supporter of Visicalc, I was eager to find out just what made SynCalc so much better than Visicalc. So I prepared a spreadsheet comparing the relative strengths and weaknesses of each.

DESCRIPTION	VISICALC	SYNCALC	EDGE
Editing Capability	None	Yes, like Atari Basic	Syn*
Upper/lower case entry	Yes	Yes	None
Word process integration	No	Yes, AtariWriter	Syn*
Functions:			
-Mathematical	12	13, includes Pi	None
-Logical	None	1, If then else	Syn*
-Special	Look up	Look up	None
-Financial	1-NPV	3-NPV, FV, PMT	Syn
-Statistical	5	8	Syn
Formatting:			
-Alignment	Right & Left	Rt.,Left,Center&Margin	Syn
-Protect	None	Protects when recalc	Syn*
-Precision	Maximum, Integer, Two	Set Precision desired	Syn
-Number	Fixed	Fixed, Float, Scient, Eng	Syn
-Other	\$	\$.%, Comma, DR/CR, or()	Syn
-Graphing	Crude, graph uses ***	None	Visi
-Column Width	All columns one size	Variable by column	Syn*
-Text across columns	Must use multiple col.	Automatic, unless off	Syn
-Sorting	None	Yes	Syn*
-Ease of Formatting	Easy beginning not end	Easy beginning or end	Syn*
Works with Atari Keypad	Yes	No	Visi*
Quality of documentation	Excellent	Excellent	None
Maximum spreadsheet size	63 columns x 254 rows	128 columns x 256 rows	Syn
Price	\$49.95	\$39.95	Syn*

* Indicates a significant advantage.

Although Visicalc's columns can be adjusted to any size you desire, all columns must be the same size. If you are at all like me and just plunge into the task at hand, this is particularly frustrating. For example, let's say you realize after all your captions are keyed in that you must change the width you have previously set for columns. This then means that all the captions that required two columns when initially typed in, must be retyped. SynCalc improves upon this situation in three ways. First, SynCalc enables you to set the width of each column individually. Second, SynCalc allows you to edit your previous entries. Third, SynCalc permits you to write over column widths.

Another problem with Visicalc that occurs when employing my "plunge in" method has to deal with formatting. Visicalc and SynCalc work reasonably well when you have correctly anticipated your formatting needs at the beginning of your spreadsheet and have copied these formatting requirements throughout your spreadsheet. However, unless you can accomplish your revised formatting requirements by changing your global (whole worksheet) formatting, Visicalc must be reformatted on a cell by cell basis or your data will be altered. On the other hand, SynCalc really shines here. SynCalc's formatting is equally easy regardless of when you desire to make changes.

Perhaps the most important single difference is that SynCalc includes the logical operative of "If...Then...Else". This gives the spreadsheet real decision making capabilities and greatly enhances the power of the program.

SynCalc has many niceties beyond the obvious advantages noted above. Pop up menus which are easy to use. Colors indicate the data entry mode, blue for text entry and green for numeric. Text entry has a marker which indicates the size of the column you are entering. Overflows will print across columns unless toggled off. To load or save a file SynCalc will print a list of all files on the disc, you just point the cursor at your selection, hit return, and you're in business. There is an expert mode which obviates the use of the pop up menus.

AtariWriter does integrate with SynCalc and works quite well with one minor exception. The default codes are not printed across the top of the screen, nor can they be recalled. However, by inserting a control key with the appropriate letter these default values can be altered. The spreadsheet in this article was prepared using SynCalc and then loaded into AtariWriter for the remaining text.

Visicalc has one distinct advantage in that it works with the Atari CX85 Numeric Keypad. As an accountant by trade, I am much faster and more accurate when using the numeric keypad, and for me this is a significant difference. If anyone has a handler program or knows how to make SynCalc work with the Atari CX85, I would greatly appreciate hearing from you.

In summary, SynCalc is a much superior spreadsheet program and well worth the price. Even if you already have become proficient at Visicalc and have many favorite active files. SynCalc is very easy to learn, well documented and even has a conversion program to convert your favorite Visicalc spreadsheets into SynCalc format. BUY IT!

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APRIL MEETING HIGHLIGHTS

Reported by
Joseph S. Kennedy

After the preliminary question and answer period, the meeting was opened by Art. Ron Kordos stated that gift memberships to the JACG are now available and that the current membership total is 506. Don Ursem will be handling the new disks for the club library while Ken McCullough will handle the mail orders for library disks. Art also had several announcements for us. ANALOG has set-up a BBS. Details are in the May issue of the magazine. Atari has released DOS 2.5 to be shipped with the 1050 disk drives. This DOS will format in either single or dual density and with the 130XE makes available the extra 64K as a ram disk. Art reported on his visit to the West Coast Computer Faire and the initial meeting of the Antic User's Group. The 520 ST is on schedule, the 65XE has been shipped to Canada and the 130XE is going on in NJ today. Atari will be opening a semi-official BBS at 408-745-2504; the Sysop is Neal Harris. Learning Phone, the Plato cartridge, will be shipped in May. It will come with a free one year subscription to Plato and one free hour of connect time. The 32 bit machine will not be announced until June so that emphasis can be placed on the ST line. ST machines will be made available to user group members with a rebate going to the group. The next issue of the Atari Explorer will feature the JACG.

Frank Pazel discussed the Astra reply to Bill Hough's letter to the editor in the January issue of the newsletter. Sadly, Frank also announced that he will no longer be able to handle all the duties of the newsletter editor after June. Some the public domain software Frank receives as the Editor was demoed. The Repair station for salvaging BASIC files; digitized rock music; and a game where you flush to the next level were shown.

At Art's Arcade we saw Rescue on Fractalus and Ball Blazer which have now been released by Epyx. Both are fantastic games from Lucas Film. Ball Blazer is what computer games are all about - playing in the imagination.

Dick Kushner demoed Electrician from Synapse. Dick showed a good foot when he was punting the mice. Perhaps the Giants should sign him up. Dick also asked for volunteers to man the JACG table at the Trenton Computer Fair. Atari will have a rep at our table with a 520ST. Dick will also give a talk at the Fair - April 20 and 21.

Dennis John showed a 5 minute video tape he put together to show what he does with his Atari.

Mirk McDonald demoed his latest living program, Leaf Storm. His article in the April issue of the newsletter covers it in all its glory.

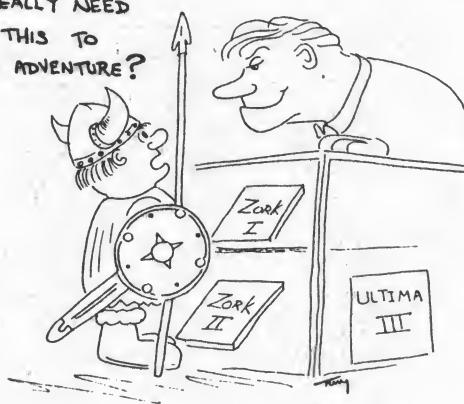
Andy Meyer and Mike Miller of AT&T announce a contest by AT&T for an adventure game for the introduction of "Equal Access" that must be written in Unix.

May is the month for the second annual Atari Safari meeting. Be there.

GIVE A BIT!!

DO I REALLY NEED

ALL OF THIS TO
PLAY AN ADVENTURE?



Writing For The JACG Newsletter

Articles should be submitted to the Editor by the 20th of the month for inclusion in the next issue. Submissions preferred on disk, using LJK Letter Perfect or Atari Writer. Font style should be Elite or Proportional with right hand justification. If hard copy is submitted the final printed width should be 4-1/4 inches from left margin to right margin. All formats will be considered including hand written documents if first arranged with the Editor.

We want to encourage everyone to voice his/her thoughts, knowledge, and opinions. Writing will be modified at the discretion of the Editor. No piece will be knowingly altered out of original intent.

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MATHFACTS
by R.G. Barclay

Reviewed by Joseph S. Kennedy

MATHFACTS by R.G. Barclay is a rarity in software - a program with documentation that not only walks you through the program but also makes sure that you know how to use the program when you're done. More specifically, MATHFACTS is a program for teaching addition, subtraction, multiplication and division. The parameters of the drills are controlled by the teacher or parent for each of the different individual drills. Thus, different levels of competency in the various functions can be challenged and tested. The changes to various levels are only accessible by the use of the password (which you can change to whatever you desire or whenever the kids crack your code) and are well presented with a series of menus.

To further make this program valuable, it is not copy protected. You can make your own back-up copy as well as copies for children of different skills levels. In fact the author encourages this. A word of praise must go to Mr. Barclay for this stance in the age of overwhelming copy protection schemes.

While I'm not a teacher by profession but rather by heredity - I have three daughters - I find this program to be an excellent aid for reinforcing math training. I feel that the printed results of each test aid in the determination of problem areas for the student. However, this program is valuable even without a printer. The problems which stumped the student are displayed on the screen after the drill. During the drill the students are given the correct response immediately after they enter an incorrect answer.

I must, however, point out two areas that I feel the program is weak in. Both are in the display format for the problems. First, the problems are presented in linear form rather than one number atop the other. This is somewhat difficult for the younger students to cope with as they are, of course, taught the other way initially. Secondly, with this linear form the answer must be entered from left to right. That is twenty-one is entered as a "2" and then a "1" instead of the opposite as is normally done on paper. Again, this can be confusing, particularly to the beginning student.

Now, with the criticism out of the way, I would recommend that parents particularly interested in helping their children progress in their math studies buy a copy of this program. I would also recommend that any teachers interested in procuring a math drill program look into MATHFACTS to see if it fills their needs as it most probably will. MATHFACTS is available from Mr. Barclay at RD #1 Country Hill Road, Lebanon, NJ 08833 for \$19.95 (plus \$1.00 shipping). It is also usually on sale in the foyer before the JACG meetings each month.

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Teacher For PILOT

By Felix Staffaroni - JACG

After reading the March issue of OUR Newsletter I decided it was about time I contributed something. I called Frank Pavel and asked him how I could help. Frank suggested writing an article for the Newsletter and reviewing the loads of educational software he receives. So here is the article.

I am an elementary teacher and use the Atari PILOT Language with my fourth grade T.A.G. (Talented and Gifted) students. Therefore, I thought I could share my knowledge of PILOT to generate music.

PILOT (Programmed Inquiry Learning Or Teaching) was first developed by John Starkweather in the early 1960's for teachers. Computer Assisted Instruction can be written in any programming language, but usually the teacher knows more about their subject matter than about computer programming. Thus, Starkweather developed PILOT to make it easier for the teacher to write programs geared toward what they were teaching their students.

PILOT was reviewed in the Newsletter's Dec. 1984 issue but the article failed to mention that PILOT also includes a harmonic SOUND mode.

There are only two PILOT commands you need to know to produce SOUNDS.

SO: - Sound

PA: - Pause

The numbers after the SO:13 command represent the location of the notes on the lines and spaces. In PILOT the range is SO:1 (lowest note) to SO:31 (highest note). The command SO:0 shuts the sound off.

Try typing this in to hear if sounds familiar. Do not use lines number.

SO:1

SO:3

SO:5

SO:6

SO:8

SO:10

SO:12

SO:13

Now try it backwards !!!!!

To obtain chords put a comma between each number - Example : SO:17,13,8
SO:17,13,8,5

The PA: command represents how much of a pause or beats each particular note receives.

Whole note - PA:128

Half note - PA:64

Quarter note - PA:32

Eighth note - PA:16

Sixteenth note - PA:8

To produce a faster TEMPO change divide the Pause number by two. To produce a slower TEMPO multiply the Pause number by two.

Now trying typing the first program putting in PA:64 in between each SO: command. Use line numbers!

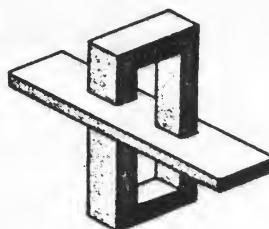
5 SO:1
10 PA:64
15 SO:3
20 PA:64
25 SO:5
30 PA:64
35 SO:6
40 PA:64
45 SO:8
50 PA:64
55 SO:10
60 PA:64
65 SO:12
70 PA:64
75 SO:13
80 PA:64
85 SO:0

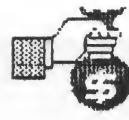
Try changing the length of the PA: command to 32 or 16 and listen to the difference. Got the beat ?

Here is a short song program written by one of my fourth grade students. Type it in and see if can recognize the tune. Don't fall asleep while YOU ARE listening !!

5 SO:20
10 PA:32
15 SO:22
20 PA:32
25 SO:24
30 PA:32
35 SO:20
40 PA:32
45 SO:20
50 PA:32
55 SO:22
60 PA:32
65 SO:24
70 PA:32
75 SO:20
80 PA:32
85 SO:24
90 PA:32
95 SO:25
100 PA:32
105 SO:27
110 PA:64
115 SO:24
120 PA:32
125 SO:25
130 PA:32
135 SO:27
140 PA:64
145 E:

If you would like more information about PILOT or the new PILOT II please let Frank Pavel know. I would be willing to share with you other ways I use PILOT with my students.





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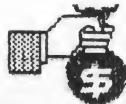
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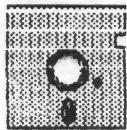
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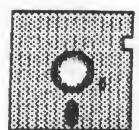
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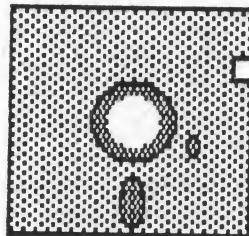
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**HAVE YOU RENEWED
YOUR MEMBERSHIP?**

**CHECK YOUR MAILING LABEL
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TELECOM

By Lawrence Moriano - JACG

In February, I had my first computer show experience, with mixed emotions. The show was held at the Aspen Hotel in Parsippany, which is only a five minute drive from my house. Upon entering the parking lot, I noticed that there was a very long line of people waiting to enter the expo. Then I encountered my first problem; where to park! After ten minutes of searching, I found a space which was a ten minute walk to the hotel. Finally I entered the line. After waiting close to a half hour, the lobby was in sight. To my dismay, another fifteen minutes passed by before I was at last in the show.

The computer expo was very disappointing to me. The large crowds made it hard to see any of the popular displays. Any time there was a new product demonstration, it was almost impossible to get close enough to the display to tell what was going on.

While walking around the show, the same question kept coming to my mind; where was Atari? To my disappointment, it was nowhere to be found. To make matters worse, out of 150 companies being represented, only three had any Atari related products. The Atari products that were displayed boiled down to a stack of 800XL's, and some old out-dated game cartridges.

To sum it up, the \$6.00 price of this show was not worth the cost if you were looking for any Atari related products. The long lines, scarce parking, and the pushing and shoving of inconsiderate people, made my first computer show a very disappointing experience.

With that out of the way, I can talk about a new database I have discovered for the home and business user.

NewsNet is a database which allows all members to access more than 250 business newsletters as well as wire services like UPI and PR Newswire. The subjects range from telecommunications to taxes. More than 3000 new articles are added every day.

To use NewsNet, you simply enter key words, names, or phrases to access every article containing those words. Special reports are available which give the inside story of new products and changes in your related industries.

The cost of NewsNet is \$15.00 per month, with no initiation fee. For more information call (1-800-345-1381).

Next month I am going to discuss the new Vidtex Communications Software offered by CompuServe.

**UNTIL NEXT MONTH
HAPPY TELECOMMUNICATING**



EASTER EGG

Downloaded from USENET
by Jim Van Ornum - JACG

Bounty Bob Boppers

To warp to level 4, on the first screen, right after getting the flower pot, hold down START and press 1.

As for the Special Code in the option menu, try the following and press OPTION after selecting the number:

40 - Quick way to fill the high score table if it is empty.

69 - Such a dirty mind!

100 - Take a look at Bob after you try this one.

213 - Ah, the old area code of Big Five.

818 - The right area code.

We were told that the next warp was to level 12.

If you found some additional codes or other Easter Eggs send them to the Editor so we can share the wealth.

ADVANCED SONGS ON THE ATARI

by Matthew Tomlinson

The Atari is a great machine. Maybe it's too good. Everyone raves about its great graphics capabilities, and, subsequently, forgets its great sound.

Oh, sure, everyone's done a scale, a chord, or a one-note "Mary Had a Little Lamb". But if you know how to read music, you can create advanced, professional-sounding songs very easily. This article gives some helpful tips, as well as a rather large listing of "Yankee Doodle Dandy". Force yourself to type it in -- you'll like the results! But in the meantime, read on and refer to the listing as I explain some basic points.

Never use individual SOUND statements. You should start your program with the beginning of a FOR/NEXT loop. Note in "Yankee Doodle Dandy" that the loop circles 267 times, for the amount of groups of notes played. The Atari can play four notes at a time, and you should use this advantage to the fullest! First in the loop, the computer READs in a set of four notes. Then comes the only SOUND statement you'll need, the one SOUND to play all the notes. Remember what the four elements of sound are: voice #, note, distortion, and volume. When playing up to four notes at a time, never have your volume of any individual note greater than seven. So realize that the Atari is playing 267 sets of four notes.

Look at the data, all of those numbers that make up most of the program. Here's where you have to know how to read music. A low C on the Atari is 243, low G is 162, and the highest B is 31, for example. NOTE: XL owners who have the reference guide, beware that it contains certain errors! Low C is 243, not 251. Middle C is 121, not 126. High C is 60, and super high C is 29.

Then comes something that looks odd. If A, the variable for the first of the four notes read in at a time, equals zero, then the computer skips the timing loop and goes on the NEXT L in line 27. This is for two reasons: one, very rarely do you have a rest (in normal SOUND statements, a rest is 0,0,0,0, 1,0,0,0, 2,0,0,0, or 3,0,0,0, depending on the voice), that is very long.

If you have a short, quick rest, and the computer goes to the time loop, you will hear a long gap in the music that will sound bad. Also, when many notes are played in a row, quickly, you need a rest between them, or the Atari will slur them all into one long note. Again, a timed rest between notes would make it sound like your orchestra had a severe case of the hiccups, pausing for a long time between repeated notes.

If, though, the note(s) are normal, and meant to be timed, it hits the time loop. Without a loop to slow your music down, it would sound pretty ridiculous; you could do a sonata in a few seconds!

You must plan this timed loop around your shortest type of note. In "Yankee Doodle Dandy", an eighth note is as quick as I get. So if I have a quarter note, I'll type the group of notes in twice; a half note, four times.

You may wonder why I don't just use a bunch of SOUND statements, over and over. Well, for one, DATA statements are much shorter and easier, and after too many SOUNDS, the Atari slows down. During a long song, it would sound like your musicians fell asleep.

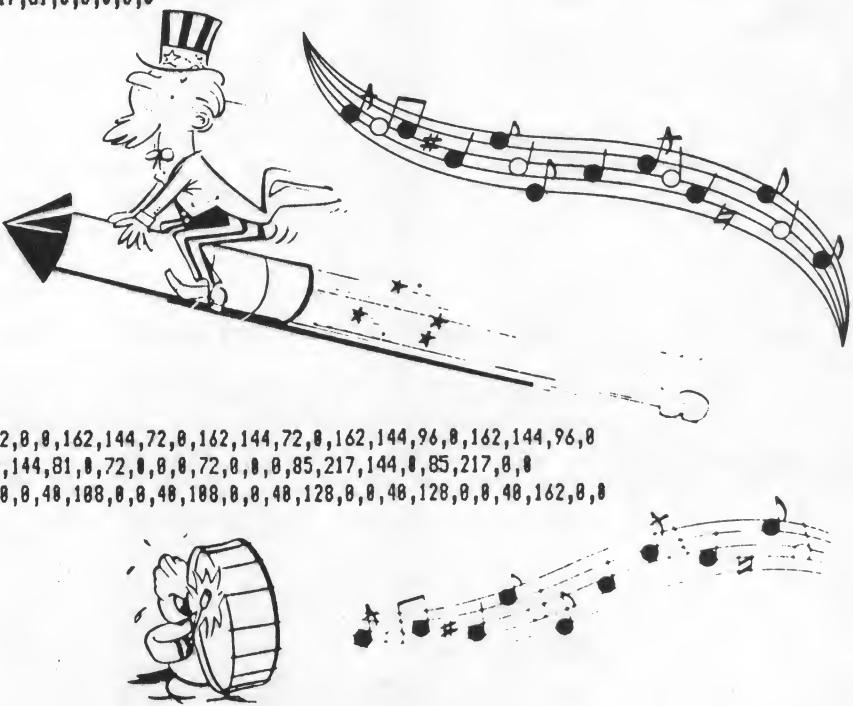
Now type in "Yankee Doodle Dandy". If you make a mistake, you'll know it! But since music is so repetitive, a lot of 'line duplicating' can be done. Note that lines 240-340 are exactly the same as those found at the beginning of the song. So you don't have to type in all those lines, just reenter the first ones under the new line numbers.

If my next article is accepted, it will deal with adding drumbeats to your songs.

NOTE: I am making a Public Domain disk of my songs. Already I have "Medley", "Ghostbusters", "Yankee Doodle Dandy", "Piano Man", "Classical Gas", "Jocularity", and Beethoven's 5th Symphony. If anyone is interested in what I am doing in any way, please write to me at:

Matthew Tomlinson
19 Harbor Drive
Lake Hopatcong, NJ 07849

★★★ V A N I L L E C O C O A B A N A N A ★★



AtariLab Light Module

by Dennis John - JACG

Over a year ago Atari announced the AtariLab science series. They put the Starter Set with Temperature Module on the market for a short time. Then, for reasons still a bit clouded, the project was put on hold.

AtariLab is back on track again with both the Starter Set and the second in the series, the Light Module, on store shelves. Atari has also indicated that several more modules will be produced.

The AtariLab Starter Set was demonstrated at a JACG meeting several months ago. Just to review briefly...

AtariLab was developed by Dickinson College. The idea behind the series is a hands-on approach to science where you learn by doing rather than just reading. AtariLab is designed for users age 9 to adult.

The Starter Set lists for \$90 but is selling for about \$60 in this area. It includes an interface which plugs into one of the Atari joystick ports and allows you to connect up to eight RCA-type phono plugs to your computer. This interface is needed to run all of the other modules in the series so the Starter Set is a must. Included with the Starter Set is the Temperature Module. It includes a 16K ROM cartridge, a temperature sensor, a thermometer, and a 138 page manual with about one hundred experiments.

The Light Module is selling for about \$40 and includes a ROM cartridge, light sensor, light assembly, various filters, a test tube, light stick, glow panel and a 106 page manual with about fifty experiments.

As with the Temperature Module, the software with the Light Module is very nice and easy to use. A "light meter" can be displayed which shows a percentage of light, from 0 to 100, in the form of a color bar. Normally you calibrate your system so that the brightest light in a given experiment will read 100% on this meter. Calibration takes only a few seconds and is virtually automatic requiring only two key presses. If at any time the light reaching the sensor goes above 100% or below the lowest possible reading, the yellow light meter display bar turns red and the digital display is preceded by a > or < sign. Up to three digital displays can be recorded on the screen at a time.

Another area of the program allows you to set up an experiment for a specific length of time ranging from two seconds to 24 hours. You can also base the experiment on data points with no specified time reference. When you begin your experiment a color graph will be displayed as the various light levels are recorded. The temperature sensor for the Starter Set can also be connected to the interface and its readings will be displayed in a second color along

with the light readings. This is useful for some of the experiments dealing with weather and solar energy.

The Light Module software can be run from the Keyboard or from a Joystick. This is a big bonus if used as part of a science fair project since it allows you to keep your computer a safe distance away from wandering hands.

After the data has been collected, the program allows you to re-display it in several graphic forms or as numeric data. This data can be saved to a disk drive and the graphs dumped to Epson compatible graphic printers.

The hardware in the Light Module, while simple, is well designed. A small cube of black plastic called the light stand has holes in four sides. The light sensor fits into any of these holes. The light assembly, a small light which is powered by the AtariLab interface, also fits into these holes. The kit's test tube can be placed in the holder between these two devices. With all three units in a straight line, experiments testing the transmission of light thru various liquids can be made. By moving the light and sensor at right angles, reflective tests can be made on the same liquids.

The color filters and a unique calibrated polarizer wheel included in the package can be placed in the light stand's filter slots for those experiments in which they are required.

The manual is well written and complete. In addition to the wide variety of experiments included, there are sections on calibration, equipment set-up, sample programs in BASIC and Logo, blank tables and graphs, a trouble-shooting guide and much more.

Not all of the experiments are winners (how about one to see if the light in your refrigerator really goes out when the door is closed?) but most of them are interesting and, as with any good scientific experiment, they generate as many new questions as they do answers. Designed as a learning tool, the AtariLab is a full blown success. As a added bonus there are many practical applications for the series. As a commercial photographer I've used the Temperature Module on a number of occasions to check chemical temperature bath equipment and processing procedures. I'm now considering a program to use the light module to determine proper exposure times on my enlarger. With the control output on the AtariLab interface I may even be able to have my Atari automatically select the proper exposure time and turn my enlarger off at the correct time.

In any case I'm very pleased with the first two releases in the AtariLab series and I look forward to the rest of the modules. While I'm waiting I think I'll check and see if that light in my refrigerator really does go out...

A Review of Turbo Printer

by Richard Kushner - JACG

At the Trenton Computer Festival I happened across an interesting product, called Turbo Printer, that I thought might be of interest to all owners of Epson MX-80 printers. I know a lot of JACG members have MX-80 printers and it is also the printer that IBM distributes with their PC. The Turbo Printer is supposed to speed up your printer by "50% or more" and be totally transparent to all software.

When I talked with the products developers, I learned that they were supplying a kit with installation instructions that contained two matched crystals to replace two crystals in the MX-80 which are of low quality and poorly matched. Well, to make a long story short, I obtained one of the Turbo Printer kits in order to evaluate it for our membership. To install the crystals you must remove the printer case cover, remove one small board, clip the leads on the two crystals currently in the printer and solder the new crystals in their place. The soldering job is quite easy and the only problem I encountered was getting at one of the crystals which is tucked under the printer platen. I admit to being quite clumsy, so anyone with even medium manual dexterity will be able to do the job. There is no massive disassembly of the printer involved.

Planning ahead, I wrote three simple BASIC programs to do a before/after comparison of the printer speed. The programs are listed below.

```
10 REM TEST #1
20 OPEN #3,4,0,"P:"
30 FOR I=1 TO 100
40 PRINT #3
50 NEXT I
60 CLOSE #3
70 END

10 REM TEST #2
20 OPEN #3,4,0,"P:"
30 FOR I=1 TO 100
40 PRINT #3;I;
45 PRINT #3;" ABCDEFGHIJKLMNOPQR
STUVWXYZabcdefghijklmnopqrstuvwxyz12345678909876543"
50 NEXT I
60 CLOSE #3
70 END

10 REM TEST #3
20 OPEN #3,4,0,"P:"
30 FOR I=1 TO 77
40 PRINT #3;I;
50 FOR J=1 TO I
55 PRINT #3;" ";
57 NEXT J
60 PRINT #3;"X"
70 NEXT I
80 CLOSE #3
90 END
```

Program #1 is simply a test that performs 100 linefeeds. Program #2 prints the same long line 100 times. I ran this program in regular, condensed and emphasized/double strike modes. Program #3 prints a loop number and then moves that number of spaces across the page before printing an "X". The result of this test is numbers down the left margin and a diagonal series of "X" symbols across the page. I figured that these tests would cover most of the types of printing commonly done. A word about the system used for these tests. I was using an Atari 800 with 48K of memory, an ATR8000 as the printer interface (with 64K printer buffer) and an MX-80/FT printer with Grastrax-Plus. You should expect similar results with an Atari 400 or XL computer and with any printer interface. The printer buffer simply provides a place to store the output from the computer, since the printer is always slower than the computer. I used a stopwatch to time each experiment.

And now, after a drum roll, the results are presented in Table 1.

TABLE 1

TEST*	BEFORE CPS	AFTER CPS	% IMPROV.
	seconds	seconds	
1	22.9	13.8	39.7
2 (regular)	128	56.2	57.7
2 (condensed)	143	50.4	73.7
2(emphasized double strike)	544	13.2	76.8
3	73.3	358	34.2
		54.5	25.6

As you can see, there is a definite improvement, although it is not 50%. I could not see any change in print quality with the modification installed and no obvious overheating of the printhead. The "CPS" numbers for Test #2 are characters printed per second calculated based on the number of characters printed and include the time required for carriage returns and linefeeds. Therefore, they are less than the advertised 80 CPS. All printer manufacturers overestimate the real print speed of their products.

The product does pretty much what is claimed of it. It converts an MX-80 into what manufacturers would call a 120 CPS printer. It is reasonably easy to install. It is reasonably priced at \$29.95. There are also price breaks available if JACG wants to place a group order, with 10-49 units available at \$20 each and >50 for \$15. The manufacturer is Turbo Printer Products, Box 566, Bala-Cynwyd, PA 19004, and their phone number is (215) 878-4345. There is a one year warranty on the product, installation of which voids any Epson warranty. But, of course, all MX-80 printers around now are past their warranty period anyway.

MX-80 owners unite! Speed up those printers and avoid being the laughing stock of your neighborhood!

THE FRIENDLYS AND THE WEIRDS

by Kenneth J. Pietrucha - JACG

Contrary to what you might believe, 'Friendlys' and 'Weirds' are not just classifications of your offsprings' friends, but rather interesting groups of numbers which appeal to recreational mathematicians.

The recreational branch of number theory concerns itself with many classifications of numbers. Most, to be perfectly honest, are useless, save for the fascination they have had for the last 2000 years.

One of the most popular classifications is the PRIME number. By definition, a PRIME number is one which is divisible only by one and itself. Examples of PRIME numbers are 2, 3, 5, 7, 11, ... and with the exception of the number 2, all appear to be odd.

PRIME number programs are very popular as exercises in computer courses. I have also noticed some computer magazines using programs of this type as benchmark tests to evaluate and compare calculating speed and accuracy between computers.

My notes show that the largest known PRIME is equal to $(2^{13} \cdot 2049) - 1$ which consists of a number with 39,751 digits. With numbers of this size, hunting for new PRIMES is best left to the big guns and their main frames.

Notice the form that is used to express the largest prime. The form " $2^P - 1$ ", is known as a MERSENNE PRIME, in honor of its discoverer, a fifteenth century priest, Father Marin Mersenne. In this case, P is a prime number which helps calculate a larger prime. The good father really thought he had something. Unfortunately, the expression does not always produce a new prime. It does however, narrow things down a bit and is a favorite with digit hunters.

Playing with the already existing PRIMES does offer some interesting possibilities. For instance, how many PRIMES are PALINDROMES? That is, if you reverse the digits, does the number remain the same? How about TWIN PRIMES? These are PRIMES separated by only one number. The first pair of TWIN PRIMES is 3 and 5.

Don't forget the EMIRPS. The what? EMIRP is PRIME spelled backwards, which should give you a clue as to what we are going to do next. How many PRIME numbers can we find (other than PALINDROMES) that when the digits are reversed yield another PRIME number.

The second most popular number classification of this type is the PERFECT number. PERFECT numbers are those numbers where the sum of its divisors is the number itself. Consider the first PERFECT number 6, with divisors of 1, 2 and 3. When its divisors are added together, they equal the original number 6. Notice the number itself is not considered as one of the divisors in this discussion. Isaac Asimov in his book Asimov on Numbers, points out the fact that for the number 6, not only is the sum of its divisors equal to 6, but the product of the divisors is also equal to 6. Asimov says the Greeks believed God created the world in six days because God couldn't resist all that perfection.

The second PERFECT NUMBER is 28, which the Greeks decided was the length of the lunar month. At this point, they reasoned that as more perfect numbers were discovered, so too would more of the mysteries of the universe be discovered. It's not been stated what they learned from the next three PERFECT numbers, but they are 496; 8128; and 33,550,336.

An interesting aspect of the PERFECT number is if we take the sum of the digits of a multi-digit PERFECT number and keep 'summing' the answers, we will always get 1. To see what I mean, take the fourth PERFECT number 8128. The sum of its digits is 19. The sum of the digits of 19 is 10 and the sum of the digits of 10 is 1; always one.

What about numbers that are not perfect? Is there any hope for them? Well, if the sum of its divisors is less than the original number, then the number is said to be DEFICIENT. If the sum of its divisors is greater than the original number, then the number is said to be ABUNDANT. Therefore, if a number isn't perfect, then it is either DEFICIENT or ABUNDANT.

To add insult to injury, ABUNDANT numbers may also be WEIRD. People have been calling numbers 'weird' for a long time without fully understanding what they were saying. What is a WEIRD number? To begin, we must consider an ABUNDANT number, which has divisors which total more than the original number. In the process of totaling these divisors, we find that for some combinations of divisor sums we get a number equal to our original number. The number is not PERFECT because we have divisors left over; this is normal for ABUNDANT numbers. There is however, a small percentage of ABUNDANT numbers that have no combination of divisors which will add up to the original number. Now, this is weird! As an example, take the number 70, which is the lowest of the WEIRDS. Its divisors are 1, 2, 5, 7, 10, 14, and 35. The sum of its divisors is 74 and no matter how you select combinations, you can never get a sub-total of 70. To date, all known WEIRDS are even, although no one has proved that odd WEIRDS do not exist.

On a happier note, another classification of numbers is called AMICABLE or FRIENDLY numbers. The AMICABLES are pairs of numbers, one ABUNDANT and the other DEFICIENT. What makes these numbers so interesting and friendly is that the sum of the divisors of each number generates the other number. The smallest known pair of AMICABLE numbers is 220 and 284. The divisors of 220 are 1, 2, 4, 5, 10, 11, 20, 22, 44, 55, and 110, which add up to 284. The divisors of 284 are 1, 2, 4, 71, and 142, which when added together equal 220.

So far, AMICABLES have appeared as two odd or two even numbers, never as one odd and one even. The search for the largest pair continues year after year without all the noise usually associated with the discovery of new PRIMES. Even if you don't discover any new AMICABLE numbers, writing a program to define the already known AMICABLES could prove to be a challenge in itself.

While we're still on the topic of FRIENDLY numbers, let's explore a classification of numbers which is still

very much virgin territory. These numbers called SOCIABLES, are very much like the AMICABLES. Instead of a pair of numbers, we are concerned with a group of three or more numbers which are referred to as a 'crowd'.

My understanding of the SOCIABLES is that the first number in the 'crowd' generates the second number, the second generates the third and the third generates the first. I have never seen any printouts of these numbers. I assume they are pretty rare. I understand that no three digit 'crowds' have ever been discovered.

Some additional number classifications are AUTOMORPHIC, and LUCKY.

AUTOMORPHIC numbers are those numbers which, when squared, appear at the end of the answer. Examples of the AUTOMORPHIC numbers are: 25 when squared equals 625; 76 when squared equals 5776.

LUCKY numbers were invented by the people working for Stanislaw Ulam (remember Ulam's problem), the Director of the Mathematics Division at the Los Alamos Scientific Labs. LUCKYS may be a little difficult to explain, so pay close attention. Write down all the numbers between 1 and 100. Starting with 1, cross out every second number; this leaves only odd numbers. The next number in succession which is not crossed out is a 3, so starting with 1, count and cross out every third number. At this point our first few numbers 2,4,5,6,8,10, and 11 are crossed out. The next number in succession which has not been crossed out is a 7, so again we start with 1 and count to seven, crossing out every seventh number not previously crossed out. We should cross out 19 and 39. Starting out with one hundred numbers, we will eventually wind up with 23 LUCKY numbers, ten of which will be PRIME and thirteen COMPOSITE.

The number of twin PRIMES and twin LUCKYS exhibit many similarities as do adjacent PRIMES and adjacent LUCKYS.

It is also interesting to note every even number within our starting range can be expressed as the sum of two LUCKYS (Goldbach's conjecture).

And up until now you thought LUCKYS were a smoke!

THE POWER OF FORTH

Part II

by Donald Forbes - JACG

The power of FORTH lies in its inner interpreter, which acts as FORTH's operating system. Last month we presented the first part of a public domain description of the inner interpreter that appeared in 'All About FORTH' by Dr. Glen B. Haydon published by Mountain View Press.

In this concluding section, Haydon describes how the inner interpreter handles variables, constants, user variables, program structures with branches, as well as defining words.

THE INNER INTERPRETER (CONT.)

In the following discussion we will need to push and pop values to our virtual data stack. The data stack in our descriptive FORTH, might be thought of as the accumulator of our virtual system. We therefore define a PUSH and a POP. These are not a part of

FORTH's standard vocabulary. By factoring these functions, the subsequent discussion is much simplified.

```
: PUSH -2 SP +! SP @ ! ;
```

Move SP to point to a new value, fetch the address of the new location and store the value.

```
: POP SP @ @ -2 SP +! ;
```

Fetch the value on the top of the data stack and then move SP to the previous value.

It is possible to interrupt the normal sequence of the inner interpreter and execute the address on the top of the data stack by EXECUTE:

```
: EXECUTE POP W ! NEXT1 ;
```

The value currently on the top of the stack is moved to W. The opcode pointed to by this address is then executed by NEXT1. If the location pointed to by this address on the top of the stack is not machine code, the results are completely unpredictable.

Execution of a variable places its parameter field address on the data stack. The function pointed to by the code field address of a variable is often given the label DOVAR. The label is not an ideogram in most FORTH implementations.

```
: DOVAR W @ 2+ PUSH NEXT ;
```

The address in W is incremented 2 bytes and is pushed to the data stack. NEXT is then executed. This function places the address of an integer variable on top of the stack. It is the address of the beginning of the parameter field.

Execution of a constant places its value on the data stack. The function pointed to by the code field address of a constant is often given the label DOCON. The label is not an ideogram in most FORTH implementations.

```
: DOCON W @ 2+ @ PUSH NEXT ;
```

The address in W is incremented 2 bytes, its contents are fetched and pushed on top of the data stack. NEXT is then executed. This function places the contents of the parameter field on top of the data stack. It is the value of the constant.

Execution of a user variable places its address on the data stack. User variables are accessed as an offset relative to the beginning of the user table. This is accomplished by a code routine which is often labelled DOUSE.

```
: DOUSE W @ 2+ @ UP +
    ( Add base of user table.)
    PUSH NEXT ;
```

The contents of the cell following that pointed to by W is fetched. UP is a constant (it may be a variable in some systems) which is the address of the base of the user table. The values are added and pushed on the data stack. It is the actual user variable address. NEXT is then executed.

One of the most unusual capabilities of FORTH is the ability to write new defining ideograms. A defining ideogram is used to compile new entries into the dictionary with

a new and unique function. That function is usually defined in high level FORTH following the ideogram DOES>. A short code operation is called to initiate the high level definitions. The defining ideograms's definition is a standard colon definition. It is then used to define new ideograms.

The defining ideogram uses a call, or a jump to a subroutine which places the address for the return function on the top of the hardware stack. Remember, in our system the hardware stack and the data stack are the same. The called subroutine will place a newly defined ideogram's parameter address on the data stack and then execute the code field addresses for the functions which follow DOES> in the defining ideogram. The subroutine which is called is often given the label DODOES, but it is not included in the FORTH vocabulary.

This FORTH operation is one of the most difficult to understand. It might help to construct a diagram showing the memory image of each of three words: DOES>, a new defining word, and a new word being defined with it. Then trace the operation of each word.

```
: DODOES DOCOL1
( Push IP on the return stack )
POP IP !
( Store the call's return address )
W @ 2+ PUSH
( Push the address of the next cell )
NEXT ;
```

DOCOL1 saves the current interpreter pointer on the return stack. Remember, a call routine including the call to DODOES will leave the address of the cell following the call on the system's hardware stack and we have made that the data stack. We pop the return address and store it in IP. We then fetch the address in W, increment it by 2 and push it onto the data stack. Finally, we execute NEXT.

In addition to these several labels pointed to by the code field of entries in the dictionary, several other machine instructions are useful. They include a method of including a value in a colon definition which is to be pushed on the data stack, and two branch routines.

In colon definitions a series of code field addresses is usually compiled. However, it is occasionally desirable to compile an integer value which is to be placed on the stack at run time. This requires that the preceding code field address places the contents of the next address on the data stack and then skip to the next address in the parameter field. This function is accomplished with the FORTH ideogram LIT.

```
: LIT IP @ @ PUSH 2 IP +! NEXT ;
```

The value pointed to by the address in IP is fetched and pushed onto the data stack. IP is incremented 2 bytes to skip to the next code field address before going to NEXT.

Structures such as IF ... ELSE ... THEN and BEGIN ... UNTIL require conditional and unconditional branches. They require a change in the interpretive pointer for the next execution. These can be accomplished with the designation of an absolute jump or a relative jump from the occurrence of the code. The relative jump is more common.

The unconditional branch is easier and often given the label BRAN.

```
: BRAN IP @ @ IP @ + IP ! NEXT ;
```

Fetch the contents of address pointed to by W. It is the offset. Then fetch the address itself and add them. This will be the address to which to jump. Store it in IP and execute NEXT.

The conditional branch is often given the label ZBRAN.

```
: ZBRAN @= IF BRAN ELSE 2 IP +!
THEN NEXT ;
```

If the value on the stack is 0, set the flag left on the stack or else reset it. Then if the flag is set, i.e., value was a zero, execute BRAN. If the flag is reset, then skip the cell containing the offset value and start execution with the next cell.

Finally, we need an address to place in the code field for a code definition using the assembler. This is simple. Remember that the code field address is a pointer to machine code. The machine code begins in the next address. This is accomplished by CODE in FORTH.

After CREATE in the definition of CODE, the sequence, HERE DUP 2- !, places the next address in the code field address of the new ideogram. This address is the beginning of the parameter field which contains machine code. It must end with a jump to NEXT.

This discussion has attempted to use FORTH to describe those functions which must be implemented in machine code to fit the actual processor. A way of thinking of this has been to assume a virtual processor which runs FORTH. In many cases, I think that you will find that the functions are only made difficult by trying to describe them in English. The language, FORTH, provides a compact and precise way of describing a function. Including both the English and FORTH descriptions might also help learning FORTH.

(The rest of Dr. Haydon's book is a description of all the commands in the MVP FORTH, which is in the public domain. Available either as a compiled program or as assembly-language source code for the IBM PC, it is a full working FORTH easily equivalent to commercial programs. The source code can also be used as an excellent reference by those who wish to build their own threaded interpretive languages. BYTE maintains the BYTENet Listings bulletin board system, which contains public domain software and listings. The number is (603) 924-9820.)



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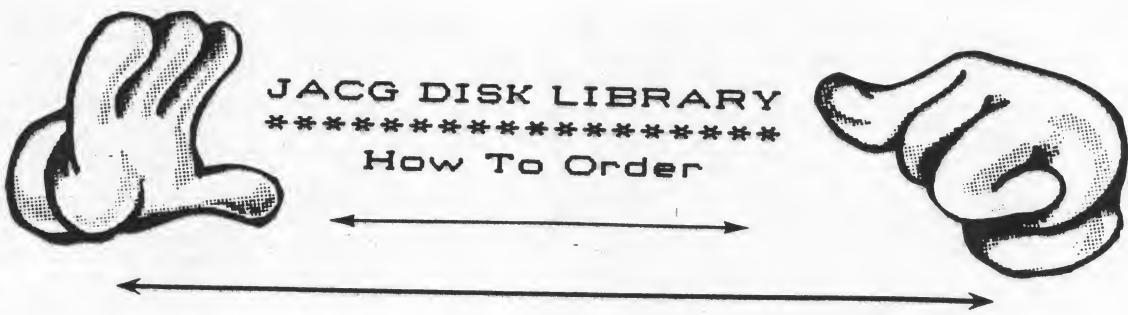
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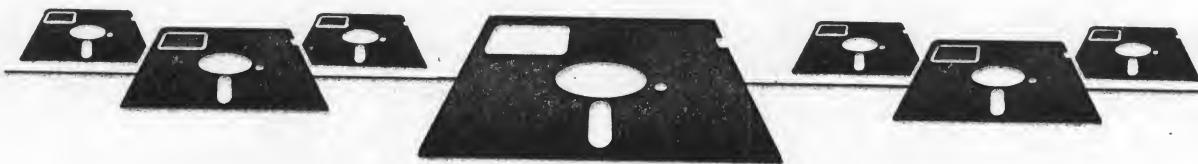
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DOCUMENTATION AND ADVICE is the other service your library provides. If you are stuck on a programming or operational problem or need info about current hardware or software, feel free to give Don a call evenings or weekends at (201) 895-2522. We have experience with or information on every programming technique, program, or peripheral that works on the Atari. JACG can't circulate documentation but we can answer questions or get you to someone who can



DISK volume 026 ML GAMES 001

The following games are all high speed machine languages. For 400/800 remove cartridge, or for XL or XE hold down OPTION while powering up the computer. Then use DOS L command to load (and execute) your selection.

DISK FILENAME	CLASSIF	LANG	WHAT IT DOES
026 FILLERUP.BIN	ARCADE	ML	SIMILAR TO QIX
PACMAN2.BIN	ARCADE	ML	SIMILAR to PACMAN
RETROFIR.BIN	ARCADE	ML	
CRASHDIV.BIN	ARCADE	ML	
PLANET.BIN	ARCADE	ML	STOP ALIEN SHIP ATTACK
AVALANCH.BIN	ARCADE	ML	SIMILAR to Q-BERT
FIREBUG.BIN	ARCADE	ML	
TRIKTRAX.BIN	ARCADE	ML	MOVE A WORM THRU MOVABLE TRACK
POKERSOL.BIN	ARCADE	ML	PLAY POKER AGAINST THE COMPUTER

DISK volume 031 HOME MANAGEMENT

DISK FILENAME	CLASSIF	LANG	WHAT IT DOES	REQUIRES	HOW TO LOAD
031 KILOWATT.BAS	HUMAN	BASIC	ELECTRICITY CONSUMPTION ANALYSIS		BASLOAD
THERMOWATT.BAS	HUMAN	BASIC	Calculate Monthly, Daily, or Annual use and cost by Kilowatt ELECTRICITY/GAS CONSUMPTION ANALYSIS		BASLOAD
FILEEM	HUMAN	BASIC	Calculate both Natural Gas and Electric use and cost by Kilowatt and Therma. Annual, Monthly, or Daily consumption		BASLOAD
FILEEM.DAT	N/A	data	File article references by publication, date, title, page number and then retrieve by any of these categories		
MONEY	HUMAN	BASIC	FINANCIAL CALCULATOR		BASLOAD
PHONE	HUMAN	BASIC	Computes worth of investment, value of savings, annuity and pension income, amount overdue on loans, interest growth, and devaluation by inflation.		BASLOAD
			Create a phone directory list, then sort and print it.		

DISK volume 032 GAMES

DISK FILENAME	CLASSIF	LANG	WHAT IT DOES	REQUIRES	HOW TO LOAD
032 FIREFIGHTER	ARCADE	BASIC	PUT OUT FIRES IN BURNING BUILDING		BASLOAD
CENTUR.BAS	ARCADE	BASIC	A well done game by JAGC member David Sdrelitz. Reainiscent of Loderunner. As fires flare up, you control the firefighter, getting extinguishers or firebuckets.		
EPSILON.BAS	ARCADE	BASIC	MANEUVER YOUR SPACE SHIP		BASLOAD
GLOOP.BAS	module	BASIC	MANEUVER THROUGH A MAZE		BASLOAD
GLOOP1.BAS	ARCADE	BASIC	used by GLOOP1 program SPACE DEFENSE GAME		BASLOAD
RESCUE.BAS	ARCADE	BASIC	Fight off a CYGNUS slime gloop attack on your moonbase. Position your saucer beneath a falling drop of contaminating gloop, and press fire button to place a space mine that will explode the gloop droplet on contact. Then race back to one of the four mine storage shacks to grab another mine. Avoid colliding with any walls. The game ends when your three bases expire, or you lose all five of your saucers. Impressive graphics.		
REFLECT.BAS	ARCADE	BASIC	CURE AND RESCUE AN ENTRANCED CAPTIVE		BASLOAD

DISK volume 052 AMS MUSIC

DISK FILENAME	CLASSIF	LANG	WHAT IT DOES	REQUIRES	HOW TO LOAD
052 AMSPLAY.BAS	MUSIC	BASIC	MUSIC PLAYER WITH PIANO DISPLAY		AUTORUNS

This is a high quality musical synthesizer for use with music files contained on volumes 52, 53, and 54. It contains menu, replay, and other features. As the music plays, an animated piano keyboard keeps time to the music. Show off what your Atari can really do!

MUSIC FILES FOR AMS PLAY:

Test 10 Benn Hill (Theme) Best Time Girls Just Want to Have Fun
Jump Belize Say Say

DISK volume 053 AMS MUSIC Files

DISK FILENAME	CLASSIF	LANG	WHAT IT DOES	REQUIRES	HOW TO LOAD
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053 MORE MUSIC FILES FOR AMS PLAY:

==== only for use with Volume 52 AMS PLAY program -- you need that disk ====
Thriller Billie J Let It Be
Maniac Open Arms Longer

DISK volume 054 AMS MUSIC Files

DISK FILENAME	CLASSIF	LANG	WHAT IT DOES	REQUIRES	HOW TO LOAD
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054 MORE MUSIC FILES FOR AMS PLAY:

==== only for use with Volume 52 AMS PLAY program -- you need that disk ====
America Down Under Islands
Lead Band Proud Mary Rhapsody in Blue
Rhythm Southern Nights

DISK volume 055 EDUCATION

DISK FILENAME	CLASSIF	LANG	WHAT IT DOES	REQUIRES	HOW TO LOAD
055 MATHWIZ.BAS	MATH	BASIC	MATH GAME		BASLOAD
MATHQUIZ.BAS	MATH	BASIC	MATH GAME	Challenge child with addition, subtraction, multiplication. Vary the difficulty to suit level, also number of rounds per game and the percent of answers correct needed to advance to the next level.	BASLOAD
MORSE	DRILL	BASIC	LEARN MORSE CODE	This quiz game covers division as well as addition, subtraction, multiplication at various skill levels.	BASLOAD
SPANISH	LANGUAGE	BASIC	LEARN SPANISH TRANSLATION	Covers both encoding and decoding words at different speed levels.	BASLOAD
SPELLSAM	DRILL	SAM	S.A.M.	Drills cover spanish to english, english to spanish, translations of verbs, nouns, days of week, colors, adjectives.	BASLOAD
				This program pronounces the word, then asks you to spell it. Keeps track of number of correct and incorrect answers. This program is an application for the S.A.M. voice generation program package available from DON T ASK Software. It will not work without it. (If you haven't heard your Atari actually speak, investigate this at your local dealer.)	
WORDSCRAM	ENGLISH	BASIC	UNSCRAMBLE WORDS	If you enjoy anagrams, you'll enjoy challenging the computer at three skill levels.	BASLOAD
READING	READING	BASIC	READING COMPREHENSION	You read a story then type in one word answers to quizzes geared to measure reading comprehension.	BASLOAD
STATES.BAS	GEOGRAPHY	BASIC	LEARN STATE CAPITALS	Ask for the capital of a state and the computer will respond; or you type the capital and it will reply with the corresponding state. Once you feel confident with the drills, you can have the computer quiz your new knowledge.	BASLOAD
ABCTRAIN.BAS	READING	BASIC	LEARN ALPHABET	Find the letters behind the squares to create the alphabet.	BASLOAD

DISK volume 056 BASIC GAMES

DISK FILENAME	CLASSIF	LANG	WHAT IT DOES	REQUIRES	HOW TO LOAD
056 SPYPLANE	GRAPHIC	BASIC	FLY PLANE THRU A MAZE		BASLOAD
MSLECHND.BAS	ARCADE	BASIC	BLAST FALLING ROCKETS		BASLOAD
WILDWEST.BAS	ARCADE	BASIC	CATCH FALLING BOMBS IN SOMBRERO	PADDLES	BASLOAD
BIFFDROP.BAS	ARCADE	BASIC	MULTI-ROOM ADVENTURE/ARCADE		BASLOAD
			Help a duck detective recover a stolen ring hidden in a series of caves. This is a puzzle -- all you have to do is get to the eighth room and touch the ring. The duck can fly to a limited extent. Practice controlling its jumps and falls. But don't touch the quills that fly through the caves. You can dispose of their eggs by kicking them. Doors lead to other caves but open only when all the eggs are cleared from the current room. Lasers turn on/off intermittently and deadly spikes await the unwary duck. Ladders are OK for climbing, but the duck has difficulty climbing back down. Jelly cubes can be walked through, but obscure the path. Hard cubes look like jelly but aren't. Counting footsteps sometimes helps to discover the right path through the gaps.		
DIVER.BAS	GRAPHIC	BASIC	DIVE FOR TREASURE		BASLOAD
LIGHTDAT.BAS	ARCADE	BASIC	CATCH FALLING LIGHTBULBS	PADDLES	BASLOAD
LIGHTSAV.BAS	module	BASIC	used by LIGHTDAT.BAS		n/a
MINER.BAS	ARCADE	BASIC	GET THE GOLD		BASLOAD
			Dig tunnels and pick up nuggets. Then take all the gold to the tunnel entrance and you go to the next level. Avoid gas pockets and the guard that watched over the gold. A blipping sound warns of stale air - get to the entrance for a breather then resume digging. You have 3 miners indicated at upper right.		

DISK volume 057 UTILITIES

DISK FILENAME	CLASSIF	LANG	WHAT IT DOES	REQUIRES	HOW TO LOAD
057 KOALA2MP	GRAPHIC	BASIC	CONVERT KOALAPAD COMPRESSED FILE		BASLOAD
			convert saved KOALAPAD files to standard binary format (Micropainter format) for use with screen dump and other programs.		
MP2FWA	GRAPHIC	BASIC	CONVERT MICROPAINTER TO FUN WITH ART		BASLOAD
			convert standard micropainter format files to format used by Epyx FUN WITH ART package.		
MP2KOALA	GRAPHIC	BASIC	CONVERT MICROPAINTER TO KOALAPAD		BASLOAD
			convert standard micropainter format files back to compressed KOALAPAD format.		
MICROPUZ		BASIC			BASLOAD
CARDFILE.BAS	FILING	BASIC	an information filing/retrieval pkg		BASLOAD
DISKPRNT.BAS	DISK	BASIC	PRINT LABELS FOR DISKETTES		BASLOAD
MATTEDIT	GRAPHIC	BASIC	A MATTING OR OVERLAY EDITOR		BASLOAD
			This utility allows mixing and overlaying graphic images on the same display screen.		
FILEPRNT.BAS	GRAPHIC	BASIC	BANK STREET WRITER FILE PRINT PROGRAM		BASLOAD
ANIMATOR	PM/GRAF	BASIC	CREATE ANIMATED PLAYER MISSILE FIGURES		BASLOAD
			A complete editing package to design player missile figures. Commands: EDIT selects player: M-EDIT displays 1-3 players together. put arrow over player at center screen by pushing stick right, then press button to display it. White circle over player numbers indicate which are being displayed. WIDTH selects width. RESOL selects single/double line resolution; COLOR uses keyboard, enter 0-255 and return; LUMIN selects brightness (note color byte value changes) COLOR(B), changes background 0-255; LUMIN(B), changes background 0-255; INVERT flips image. SCROLL moves in desired direction; INVERSE reverses color. ERASE deletes. LOAD/SAVE DATA moves all player data as a set to/from cassette; POKE DATA lets you key in player data value 0-255, move stick to exit this mode. HARDCOPY prints player data as table. ANIMATE moves all 3 players. move stick; RIGHT to exit, Left to reorder sequence, DOWN to slow it. UP to speed up; when players overlap (0 and 1 only) press optic key to generate third color for overlap region. to cancel any keyboard command, move stick instead of pressing return.		
CONTEXT	WP	BASIC	CONVERT LETTER PERFECT FILES		BASLOAD
			convert documents saved in LJK LETTER PERFECT format to normal Atari DOS.		
SETUPR.BAS	WP	BASIC	EPSON MX-80 SETUP for VISICALC		BASLOAD
TRACE.UTL		BASIC	sets up printer modes for easiest compatibility with VISICALC program.		
			BASIC EXECUTION OF BASIC PROGRAM		BASLOAD
			Add this in and see your BASIC program step through its logic, so you can find the bugs and fix them more easily.		

DISK FILENAME	CLASSIF	LANG	WHAT IT DOES	DISK volume 058	UTILITIES	REQUIRES	HOW TO LOAD
058 AUTOM.ACT	XPER	ACTION	AUTOMATA				ACTION
AUTOM.BAS	XPER	BASIC	AUTOMATA				BASLOAD
AUTOM.DOC	DOC	data	write-up for AUTOMATA programs				
AUTOM.TXT	DOC	data	copy this to E: or F: to view it write-up for AUTOMATA programs				
SCRNLOAD.BAS	GRAPHIC	BASIC	LOAD a GRAPHIC SCREEN				BASLOAD
SCRNMAKE.BAS	GRAPHIC	BASIC	SAVE a GRAPHIC SCREEN				BASLOAD
EXTDOSDI.BAS	DOS	BASIC					
KOALACUR.BAS	GRAPHIC	BASIC	MENU CREATION PROGRAM MENU SELECT USING KOALAPAD				BASLOAD
TINYTEXT.LST	WP	BASIC	PRIMITIVE WORD PROCESSOR				BASLOAD
TINYTEXT.DOC	DOC	data	documentation for TINYTEXT				BASENTER
THHELP.TXT	DOC	data	documentation for TINYTEXT				copy to E:
FILECOPY	DISK	BASIC	FAST DISK COPY PROGRAM				copy to E:
							BASLOAD

=====
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If all of this sounds good to you send a check or money order, payable to JACG, to:

Ron Kordos
201 Lake Valley Road
Morristown, NJ 07960

Remember, receiving the JACG Newsletter is just one of the many benefits of being a member of JACG.

=====
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=====

Take a moment and look at your mailing label on a recent issue of the JACG newsletter. Check the bottom right hand corner following "Last Issue:". This is the month/year when your membership expires. Try to renew at least one month early. This helps us keep our book keeping in order and avoids your missing any issues of the newsletter.

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2. Copy the information on your mailing label and send, with \$20, to:

Ron Kordos
Treasurer, JACG
201 Lake Valley Road
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=====
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>>>>><<<<<<<

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JACG NEWSLETTER - VOLUME 4, NUMBER 9

MAY 1985

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